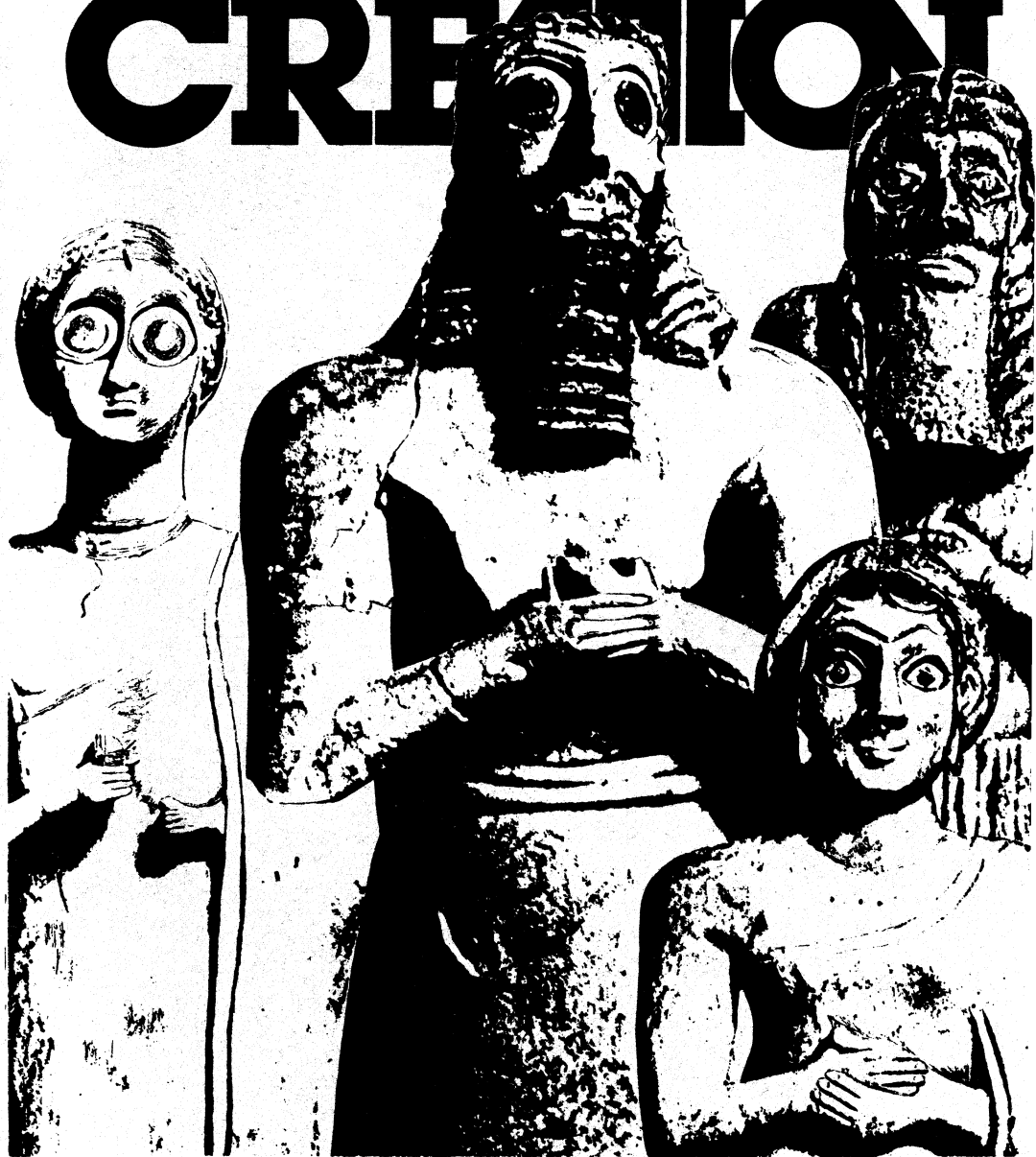


BIBLICAL CREATION



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Cover Illustration: Stone Sumerian Statuettes of early Mesopotamia

Editorial: Stories of Creation

Despite the ample talents of its presenter, the BBC's latest evolutionary extravaganza went off rather as a damp squib. In the programme *Origins* (BBC2, 18 March) Dr. Jonathan Miller was given a broad canvas on which to paint for two full hours. The programme incorporated numerous fascinating research reports - in many cases outlining facts and concepts with which our creation-faith must interact. Dr. Miller's task was to try to integrate these manifold ideas into a single coherent story. One can only admire his efforts. But ultimately there is the basic philosophical obstacle of deriving meaning from a universe without meaning. The bottom line of Dr. Miller's story is that we are simply here in a vast and intricate cosmos.

The intellectual footwork of such modern 'origins' programmes bears striking similarities to what has been termed the 'intellectual adventure of ancient man'. I refer to the various cosmologies and cosmogonies of antiquity. Their descendants survive amongst animist tribes today. In a recent publication for schools, the Pictorial Charts Educational Trust (Publishers) in London have released two series of charts and accompanying notes entitled 'Creation Stories' (reference E700 & E701). These are authored by a Council of Churches international religious education working party led by Martin Palmer and Esther Bisset. They write apparently from a perspective of religious liberalism. But much of what they say is factually correct and very perceptive. The description of the 'Christian Creation Story' consists largely of quotations from Genesis 1 & 2. Interestingly the 'Jewish Creation Story' is presented as heavily dependent upon the Talmud (a collection of commentaries upon the Torah). This differs significantly from Genesis, especially as respects the origins of woman. By contrast, the Hindu creation story, given in this publication, is designed to explain the origins of reincarnation. The Muslim creation story is, of course, based upon the Koran.

Three rivers of thought and practice flow into making traditional Chinese belief. These are Taoism, based on the teachings of the book 'Tao Te Ching' (c500BC); Confucianism, springing from the ethics of K'ung Fu tzu, (c550BC) and Buddhism, which first appeared in China during the 1st century AD. All three speak of yin and yang, the dark and the light, as being the creative power which sustains all life and being. Yin and yang are not seen as gods or deities in any sense. They are the natural forces behind nature and even the gods, such as P'an Ku, are creations of the yin and yang.

Different from most others are the Australian Aborigines dreamtime (creation) stories, and those of the Yanomamo Saniema tribes of the Amazonian rain forests of South America. The Sanema believe that all of the living things of the forest came into being through 'original ancestors', whose spirits still inhabit the forest.

Finally, however, we find amongst these notes the 'Humanist Creation Story'! Here there is a summary of the Big Bang cosmology as the ultimate wisdom of western intellectuals. Thus the likes of Dr. Miller - and ourselves - are placed alongside the 'primitive' tribespeople in our human struggle to understand our nature and environment. Yet we have not been placed hopelessly before the enigma of existence. The Christian revelation illuminates a dark world, and the God who commanded the light to shine out of darkness has shone his grace and truth into our hearts. Knowing God, through Jesus Christ, we know the Alpha and the Omega. Whatever questions then remain, we are sure of the ultimate starting point.

In two major articles in this issue we are guided through some of the implications of our creation-faith as we consider both the biblical world-picture in an ancient near-eastern setting and contemporary discussion of the 'anthropic' principle. Let no-one conclude that Biblical Creation is a soft intellectual option!

David Watts.

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BIBLICAL CREATION ACCOUNTS AND NEAR EASTERN MYTHS

Noel K. Weeks

Frequently in reading treatments of the Biblical passages dealing with creation one encounters the claim that these passages derive from or reflect Near Eastern mythology. Sometimes that previous history is seen as the key to the interpretation of the passage. Sometimes the Biblical authors are said to have developed these passages by a process of reaction against, or refinement of, a cruder mythology. Sometimes this supposed origin is used to interpret the passage. Very often certain elements of the passage will be set aside as reflecting the older mythology. Sometimes that is the way the whole passage is treated.

When one comes to investigate this relationship between Biblical passage and myth, there are a number of difficulties. Sometimes the supposed origin is relatively clear and well-known. An example would be the postulate that the Babylonian myth *Enuma Elish* lies behind Genesis 1. Yet in this case the actual proof of the relationship is rather thin as the material in common is quite small (see further below). In other cases the overlap is greater but the suggested original myth is a postulate of scholars rather than something actually known. A good example is the many attempts that have been made to find a mythical origin for the story of the fall into sin in Gen. 3.

Examples like this make it clear that we are not dealing just with a realisation by scholars of a close structural and verbal parallel between Biblical text and Near Eastern myth. While there are a couple of examples of verbal parallels, often the relationship is not clear and obvious. The lack of close parallels indicate that factors other than obvious relationship are determining scholarly conclusions. It is to such factors that I would like to turn in the first instance.

'Origins' as a problem in the history of ideas.

We tend to think that it is particularly the natural scientist who has a problem of origins. His whole method tends to consist of seeking an antecedent physical cause. Hence the absolute origin will be a particular problem for him, especially if his presuppositions exclude the actions of God. However, the historian, especially the historian of ideas, has an analogous problem. How and where does an idea originate, especially a religious idea? Just as a naturalistic scientist will exclude creation, so a naturalistic historian of ideas will exclude revelation. The reason for the exclusion is the same in both cases: activity of God contradicts the fundamental axiom that God must be excluded from the world.

My purpose is not to investigate all the ways people have attempted to explain human religiosity. Rather I want to point out that such attempts can influence thinking about Biblical texts¹. For example, it is common to give to myth and consequently to religion, an aetiological character. That is, it is man's attempt to understand the world of his experience in terms of actions of personal beings. The unexpressed assumption is that the ultimate reality is the impersonal world of matter. To see personal gods as active is to think in mythical terms². It follows of course from this assumption that the Bible must be seen as a mythical document for it speaks of a personal God in control of all. If the Bible reflects a mythical worldview, then it is logical to explain it in terms of other examples of that perspective.

The point to be grasped is that this position was not reached by any comparison of Biblical and other texts. It is rather a consequence of a widely held assumption about the nature of the world. Suppose comparison of Biblical and other texts should show a great contrast between the Bible and contemporary literature. We would then be faced with the reality of originality; that is, of an event which cannot be traced to a preceding material cause. A worldview would be threatened.

Paradoxically many people who read the Bible in terms of a common mythical pattern are willing to allow for another case of originality. This is the originality of the Greeks. The term 'mythical' is a perjorative one for most writers today. It assigns to a man or a book a mentality which does not warrant serious consideration. The modern secular mentality is elevated over other mentalities. However, if we really believed in the doctrine that everything arises out of a preceding cause, we should say that this modern mentality must be derived from the preceding mythical mentality. That would raise the prospect of continuing

The historian is then faced with a problem quite analogous to that of the biologist faced with animal forms with no connecting or intermediary forms. The historian also postulates a series of missing links and a possible path from one form to another.

There is, however, a crucial difference between scientist and historian. The scientist is already working at the level of physical entities. He does not have to reduce it any further to have his discipline conform to the doctrine that the world is reducible totally and completely to matter in motion. The historian is working with ideas. Ideas, especially the ideas of myths, are a long way from atoms in motion.

To fit properly within a naturalistic framework, the historian has to find an explanation of ideas that are congenial to that naturalistic worldview. His problem here is not just Biblical creation accounts. It is the very fact that people tend to have religious ideas about origins. Further it is that people are religious.

mythical elements in modern thought. The way this is commonly dealt with is to make a sharp break between ancient Near Eastern mythical thought (including the Bible) and Greek philosophy seen as the precursor of modern secular thought.³ As with all secular thought consistency must destroy the foundations of the theory itself. Hence originality is allowed for the Greeks but not the Hebrews⁴.

The 'mythical' mentality

It has been pointed out above that the 'mythical' mentality is commonly seen in terms of filling the world with personal forces. However, a more careful examination of expositions of this state of mind reveals a considerable amount of vagueness and confusion. Childs⁵ sees myth basically as a 'creation' account. That is, as an account of how the existing structures of reality arose in primitive times. They are then preserved through the cult. Frankfort,⁶ on the other hand, sees the mythical mentality primarily in a lack of distance between subject and object. His treatment and that of his collaborators is very much influenced by a post-Kantian understanding of the relation between subject and object. At points it almost seems that anybody before Kant must have had a mythical worldview!

A similar confusion exists when one probes into the things which are supposed to be typical of the mythical mentality. For example the mythical mentality is supposed to have a very crude physical picture of the earth, the sea and the heavens. Yet the mythical view of space is also claimed to be non-Euclidean and its view of the heavens is described as non-mechanistic. Thus Childs ties himself in a logical knot. He first says⁷ that mythical space was not seen like Euclidean space. In Euclidean space there are no special points. Each point is surrounded equally by homogenous extensive space. In mythical space not all points are alike. Some have special content. He then says⁸ that calling Jerusalem the 'navel' of the earth indicates a mythical view of space⁹. It means that the earth was seen as a 'flat circular surface' formed 'around the navel'. Now of course only a Euclidean mentality would interpret the information that the earth has a 'navel' into the conclusion that the world is 1)'flat' and 2)'circular'. If the mythical mind, as Childs informs us, is not interested in Euclidean concepts of pure extension in space, then it would not form pictures of the world involving such concepts.

What is going on in these cases is not a pure empirical investigation of the expressions of the mythical mind. Rather the mythical mind is being reconstructed by two processes. One is by taking what modern man sees as being cultured thought forms. Mythical thought is then made the opposite of this. If we see modern thought as being categorised by a critical distance between the subject and object, then mythical thought will lack this distance. If we see it as a rejection of a personal creator/ruler God, then mythical thought is defined as having this.

The second process consists of attributing to the primitive mind a crude physical picture of the universe. The mythographers are accused of believing in a three-storey universe or the earth as a flat circular disk around a center. Yet if one reads Ancient Near Eastern myths in which such concepts are supposedly found, one cannot find a clear simple description of this crude world picture. Nowhere do we find a primitive architect's description of the three-storey universe or a primitive geographer's description of the circular world. What we find rather are statements such as the one referring to the 'navel of the earth' or statements about going down to the underworld or up to heaven. The modern scholar infers from this a certain sort of physical picture in the mind of the mythographer.

Yet one has to inquire whether the modern scholar is not guilty of gross anachronism. Surely this interest in physical and mechanical pictures of the universe is particularly a feature of secularised Greek thought and its modern derivatives. It is not characteristic of Ancient Near Eastern thought. Hence the whole picture of the mythical mind rests upon a fundamental contradiction. First the distance between the mythical mentality and the modern mind is emphasised even to the extent of defining the mythical mind as the opposite of the modern mind. Then the mythical mind is described as having the same interests as a modern, only in a cruder form. If the mythical mind is really so interested in describing the universe in personal terms, then we should not, without explicit evidence, regard it as having a crude mechanical and physical picture of the universe.

The problem which we face here is analagous to that faced by Anthropology in interpreting non-Western or non-modern cultures. We can very easily interpret that alien culture in our own terms or our interpretation can reflect a debate in our own culture which has no reference to the alien culture we are studying. This propensity in Anthropology should caution us in the common habit of explaining Ancient Near Eastern myths by analogies with Anthropological studies of modern 'Primitives'. If we approach modern 'Primitives' with the same assumptions as we approach Ancient Near Eastern myths, then analogies in the results are only to be expected!¹⁰

Perhaps the difficulty of interpreting Ancient Near Eastern cosmology in terms of a crude physical picture will become clearer if we consider just one of the better known myths: *Enuma Elish* or as it is often called, the Babylonian Creation Epic¹¹. When the story begins we have three 'characters': Apsu, Ti'amat and Mummu. These three are constantly treated as persons. That is, they act like humans. And yet they are also physical entities. For example, 'they mixed together their waters' (1:5).

What sort of cosmological picture can we make out of this? Apsu is generally regarded as the sweet waters, because there are texts in which *apsu* as a common noun refers to springs or canal waters¹² and Ti'amat is obviously related to the common noun generally translated as 'sea'¹³. Hence, Apsu is considered 'fresh water' and Ti'amat 'salt water'. What then does the text mean when it says 'they mixed together their waters' (I.5)? One can construct imaginary pictures like a point where the fresh water under the earth meets the salt water of the ocean, but what meaning has this when the text is describing a period before the earth existed? And how does one know whether the physical picture of waters mixing is determined not by a cosmological picture but by the fact that Apsu and Ti'amat are described in this portion of the text as the parents of the gods? To complicate the picture, there are passages in which Apsu seems a reference to a salt water location.

Apsu and Mummu planned to kill the noisy gods they had created in order to have peace. Ea, the god of wisdom and spells, foiled this plan by enchantments upon Apsu and Mummu. Ea established his dwelling upon Apsu (I:71) and called the dwelling Apsu (I:76)! What physical picture one draws from this is uncertain. The Apsu or 'deep' is commonly regarded as the domain of Ea. Yet one wonders whether the primary concern of the author may be to give a mythical history of the temple of Ea. The text dealing with the establishment of the dwelling of the Ea uses terms commonly used of temples (I:76,77)

Is the author really giving a cosmology in which the cosmological part 'Apsu', where Ea dwells, is built on the cosmological part 'Apsu' which is the subterranean sweet water? if so, which 'Apsu' is meant in any other cosmological context?

The absurdity of trying to turn all the images in the myth into physical pictures should be becoming clearer at this point. Certainly by selective use of quotations we can draw a physical picture out of the text. The more we explore all the references to the supposed cosmological parts like the Apsu, the more clear it becomes that the author was not working with a simple physical cosmology.

Ti'amat then turned against the younger gods. Their champion this time was Marduk, the son of Ea. He killed Ti'amat. What followed her defeat clearly has cosmological implications, but once again it is hard to extract a simple physical picture. Marduk split her in half. With one half of her he made the sky. He set some sort of a guard so that the waters could not escape from this half, now become the sky (IV:136-140).

The crucial question about the lines that follow (IV:142-5) is whether they describe the formation of the earth placed over the *apsu* or whether they con-

tinue to describe the creation of the sky. The former view was advocated by Jensen¹⁵ and was followed by Heidel¹⁶. Speiser's translation is ambiguous¹⁷. The Chicago Assyrian Dictionary clearly follows the latter view¹⁸. If Jensen's view is correct then the text indicated some sort of a three-tier universe with the Apsu of subterranean waters covered by the earth, with the sky above that. If the CAD translation is correct then all we have in this portion of the text is sky and *apsu* without any mention of their cosmological relationship. Undoubtedly the CAD translation is to be preferred. It all hinges on the translation of one word at the end of I:145. Do we translate with Heidel: 'The great structure Esharra which he made as a canopy'¹⁹ or with CAD 'the *esgalla* (great temple), (called) Esarra which he created, is the sky.'²⁰ Heidel then reads into his translation Jensen's idea that Esarra is the earth stretched like a canopy over the Apsu. However the word translated *canopy* occurs in I:138 where Heidel translates it as 'sky', which is its regular meaning in Akkadian texts²¹. Furthermore an introduction of the earth at this point would be an unnatural intrusion into the text which continues in the next tablet with a description of the ordering of the heavens. Hence Heidel's translation goes against the context and imports an irregular meaning into the crucial word, which has already been used in this very context in its normal meaning. Really these verses say nothing about the cosmological relationship of heaven, earth and Apsu. All it says of cosmological relevance is that the sky is some sort of counterpart of the Apsu.

What became of the other half of Ti'amat? The older translations like Heidel and Speiser do not give an answer to this question because the end of tablet V of the series had not been reconstructed when they were done. We now have a partial text of this tablet. It would seem that this refers to the fate of the rest of Ti'amat's body. However the information the text gives seems to be that mountains were built over parts of her body and the Tigris and Euphrates flowed out of her eyes²³. A further piece of information of cosmological relevance is that the temple of Marduk in Babylon is pictured as being a place to which the gods might go up from the Apsu or down from heaven²⁴. Thus we can say that Babylon is viewed as above the Apsu but below heaven. However, the relevance of all of this to the fate of the other part of Ti'amat is obscure. How does it fit with the generally accepted interpretation of Ti'amat as 'sea' that the Tigris and Euphrates flow out of her eyes? Why are mountains built on her? There is an earlier myth which describes how the god Ninurta, having defeated Kur, had to build walls and a heap of stones to hold back the waters which rose²⁵. Perhaps the basic idea here is that Marduk has to control the waters of Ti'amat. Some of those waters is channelled into the main rivers. If this is the case maybe Ti'amat was seen not as the source of 'earth' in general but as under the mountains of the north and east²⁶ from whence flow the waters of Ti'amat as river. If that is the case then Ti'amat cannot mean simply 'salt water'. Perhaps the real distinction between Apsu and Ti'amat is that Apsu represents water as quiet, that is, under the spell of Ea; (i.e. springs and pools) while Ti'amat represents water as raging

and potentially dangerous (i.e. sea and rivers).

Whatever the truth of these speculations, we still do not get a clear picture of earth suspended between underworld and sky.

To complicate matters further, Marduk establishes in the sky stations for the great gods, Anu, Enlil and Ea (IV:146 and V:1ff). Thus Ea has a heavenly domain as well as an association with the Apsu. This heavenly domain was the southern part of the sky which may connect with Ea's association with the Persian Gulf; i.e. the area to the south of Babylonia. Does Ea's domain stretch from southern sky to southern sea? How does all of this fit a clearly demarcated three tier system?

There is one other passage in the text which has been seen as having cosmological relevance. This comes in the description of the construction of Marduk's temple in Babylon, Esagila. Both Heidel and Speiser take the reference to be to a physical picture and then have the greatest difficulty in making sense of that picture. Heidel translates VI:62,3 as 'they raised the head of Esagila on high, level with the Apsu. After they had built the lofty stagetower of the Apsu'²⁷. He suggests that it means 'that the foundation of Esagila reached down as far as the waters of the Apsu. Hence the stagetower could be called 'the lofty stagetower of the Apsu'²⁸. The obvious retort is that the text talks about the top, not the foundation of Esagila.

Speiser translates: 'they raised high the head of Esagila equally Apsu. Having built a stagetower (as high as) Apsu'²⁹. He attempts to take seriously the reference to the 'head' of Esagila by suggesting that 'the height of Esagila corresponded to the depth of Apsu's waters'³⁰. Once again one wonders whether all this is in the text.

There is a much simpler translation:

'They raised high the head of Esagila, the counterpart of the Apsu.³¹ They made the ziggurat (stagetower) of the high Apsu'.

The text says that Esagila is a copy of the Apsu and hence can be called the Apsu. For we have already seen that the Apsu as well as being a person and a watery domain, is a dwelling of the god Ea. Gods naturally dwell in temples. Hence Esagila is here being declared a worthy counterpart of Ea's temple.

Certainly it does not make for a clear cosmology to have things that can be persons, cosmological parts and temples, in confusing interchange. The line after those just discussed describes how Marduk, Enlil and Ea then dwelled in Esagila. If Ea lives in Marduk's temple Esagila (called Apsu) is then Esagila the same as

Apsu? Is it a duplicate or simply(!) another manifestation of Apsu? What becomes of the cosmological rôle of Apsu under any of these possibilities? We can add to these complications for cosmology the fact that we have already seen that Ea also has a place in the sky. The sky is called Esarra which in turn is attested as a name for various temples including those of Anu and Enlil³².

All this consideration of the cosmology of just one Babylonian text is aimed to make one simple point. Trying to read a simple crude physical picture out of the text creates all sorts of absurdities. Babylonians were not early Ionian philosophers creating physical models of the universe! Certainly one can select texts to produce an impression that they held to a three storey universe, but constructing physical pictures of the universe was not the primary aim of the mythographers. There is no way of having a simple physical cosmology when cosmological parts are also persons and temples, located in particular cities.

Is it possible to come to a more scholarly appraisal of Ancient Near Eastern mythology? One has to be cautious because there are many passages in the myths which I quite frankly, do not understand. Furthermore the search for some basic core to the mythical mind often ignores the reality of history. Mythologies do change. Further there are obvious differences between Egyptian and Mesopotamian mythologies.

It is true that some Mesopotamian myths do attempt to interpret the existing order of human life and society as a consequence of an order established by the gods. This is particularly the case with the Sumerian myths which seem to stem from Uruk. Over a hundred prescriptions (Sumerian ME) codify and organise human life. There is no attempt at detailed aetiologies of the various customs of human life. They are all lumped together in this list of divine ordinances³³.

However, one does not find the same approach in the later myths written in Akkadian. The Erra myth is concerned more with the contribution of an unpredictable deity to the devastation of Babylonia by a foreign enemy. Its concern is thus more 'providence' than 'creation'³⁴.

It is possible that the Sumerian Uruk myths reflect the organised, regulated world of Sumerian times with things regulated by official edict. The Erra myth may in turn reflect the chaotic times in a weak Babylonia in the late second or early first millennium B.C. Thus each myth and its concerns becomes more understandable if we view it against the time of its origins. Does that help us understand this mysterious 'essence' of mythology or the mythical 'mentality'? Of course it does not because these things are ideal constructs of the scholarly mind, supposedly true of all mythology no matter what its historical context.

If we try to find a generalisation sufficiently vague to take into account all ancient myths we come up with nothing much more than the conventional literary definition of a myth: 'a story with gods as the main actors'. However this definition may in turn include stories which contain gods but which are more comedies or parodies than serious texts.

There is thus a certain circularity about many descriptions of the main concerns of myths. Certain myths are selected as typical of mythology. The characteristics of myths are then derived from these. If we select other myths or myths of a different period, we would obtain a different definition.

Rather we should say that we deal with societies in which the reality of the gods and their impact on the affairs of men are taken for granted. The way those gods are described will reflect the particular questions, problems, concepts and institutions of the society in question. Even their comedy and their pornography may involve gods³⁵. If mechanical and cosmological questions of a physical sort are not a major concern of such cultures, then it is foolish to expect such concerns in their myths.

Mythology and the Old Testament

The preceding intensive introduction is partly in order to break through the scholarly generalisations which characterise discussions in this area. So often we are told that the Bible reflects the primitive three storey universe characteristic of *ancient mythology*. The point is not proved by careful treatment of texts nor by evidence that such questions were on the agenda of contemporary thinkers. It is made as a categoric statement.

We are told that the Bible writers have borrowed this or that element from contemporary mythology. Yet we are not told why they borrowed it. I will take up this point later in a comparison of the Biblical text and specific myths. However the general point I want to make is that myths do have a specific historical setting. Thus the borrowing of a myth must also have a historical setting. Why would Israel borrow crucial elements of its thought, like creation, from the mythologies of other people? For example, it is commonly asserted that Genesis 1 is a purified form of *Enuma Elish* and that the borrowing took place during the Babylonian exile. Are we then to believe that the Jews had no creation account until c. 600 B.C.? Lest it be posited that Gen. 2 is the original account, it should be pointed out that it contains no reference to the creation of the sea or the heavenly bodies. Are we to believe that Israel existed for hundreds of years without any attempt to understand the origin of these things? That question becomes particularly forceful if we define the essence of mythology, as many do, in an attempt to understand 'origins' in terms of gods. Israel would then be *unique* in having no early interest in the origin of major elements of the cosmos.

Essentially what is happening, in this way of treating Biblical texts, is an underestimation or ignoring of the possibility of originality in Israel, in order to make more plausible the thesis of borrowing. Since originality logically excludes borrowing, it cannot be given full consideration where a scholar wants to prove borrowing. Yet the failure to consider the possibility is a mark of bias, not of scholarship.

Myth and history

One can make a crude division of the tendency of Old Testament studies this century into three phases. The oldest phase was one of dominant liberalism. Essentially the Old Testament was seen as unreliable and mythical. This was followed by the Neo-orthodox reaction often linked with the name of Albright. This school did not deny the 'mythical' aspects of the O.T. but sought to minimise their significance by emphasising the historical. Thus the significance and uniqueness of Israel lay in their adding to the mythical inheritance, a seeing of God as the God of history³⁶. Near Eastern religion in general was pictured as the religion of the cyclical natural processes. The religion of Israel was the religion of the God who acts in history. This Neo-orthodox view is now under fire from many sides. Whatever the motives of the attacks, much of it is justified in points such as the under-rating of the historical element in Mesopotamian religion³⁷ and the use of bad historical method in attempts to prove the historicity of the Biblical text³⁸.

The more recent liberal reaction to Neo-orthodoxy, with its equally tendentious use of the historical data, is not my concern at the moment³⁹. Rather, my concern is with a consequence of the Neo-orthodox position. Since it saw Israel as 'historicising' original myth, this led to certain consequences for exegesis. Even the passages which showed no mythical elements could be seen as having a mythological origin. The lack of myth in the present form of the text could be ascribed to Israel's tendency to historicise myth. It was natural then to try to find elements of the original myth in the Biblical passage which have survived 'historicising'.

If in addition all Biblical creation accounts or allusions are seen as essentially mythical, then it becomes very easy to find 'myth' in the O.T. This is all the more so because the Biblical text makes no sharp separation between the creation and subsequent history. Very commonly the history of God's dealings with Israel is in terms of concepts and structures that form part of creation. (See further below).

As long as Neo-orthodox scholarship, and certain forms of Evangelical scholarship following the Neo-orthodox lead, see creation as an embarrassment because it is essentially 'mythical', then there is no incentive to explore the relationship of creation and history in the Biblical text. A dependence of the

historical accounts upon creation accounts would undermine Neo-orthodoxy's claim that Israel, at least partially, broke out of the mythical framework into history. It would undermine Evangelicalism's willingness to defend the accuracy of the Biblical history but not the accuracy of Biblical cosmology and cosmogeny.

However if my claim, that history is seen in terms of images drawn from creation, is correct, then we cannot ignore the Biblical view of the creation and history. Correct exegesis demands our considering the references to creation which permeate the later history. When we do that, an interesting fact emerges. A particular understanding of the relation of the creation and history is part of the distinctiveness of the Biblical text. Unless that connection is realised, the true meaning of many of the so-called 'mythical' passages is lost. This will emerge more clearly from a consideration of the relevant passages.

***Enuma Elish* and Genesis 1**

The arguments for a connection between the so-called Babylonian Creation account and the Bible take various forms.

1. Watery origins

The original entities in the Babylonian story are connected with water. They are Apsu, Mummu and Ti'amat. Does this prove a connection of Genesis and *Enuma Elish*? Of itself it probably proves nothing as watery origins is a very common feature in cosmologies⁴⁰. Specific connection depends upon the word used for 'deep' in Gen. 1:2. The Hebrew *tehôm* is etymologically related to *ti'amtû tâmtu* the basis of the name Ti'amat. Some have tried to go further and argue that *tehôm* is actually derived from Ti'amat. There are two basic reasons for rejecting this idea. *Tehôm* is actually closer to the etymological origin of the word than the Babylonian form because the phoneme in the Hebrew word had been lost in Akkadian⁴¹ before the language was first written in the late third millennium B.C. Further there is no feminine 't' ending to the Hebrew word as there is to the Babylonian⁴².

More difficult to evaluate is the suggestion that *tehôm* was a common noun deliberately chosen to evoke the memory of Ti'amat. If we had other cases in Gen. 1 of evocative words we would have a stronger argument. Given the etymological relationship of Hebrew and Babylonian, use of related words in similar contexts could occur without any intention of allusion on the part of the author. If, as is postulated, the author of Gen. 1 has consciously demythologised *Enuma Elish* it is rather strange that he would have a conscious allusion to Ti'amat, the mother of all the gods. If his intent was polemical, to prove that Ti'amat was really just the sea and not a goddess, one wonders what purpose is served by a mere mention of the word without elaboration.

Thus while allusion cannot be conclusively disproven, etymological relationship of language and the common tendency of creation stories to start from watery origins is a perfectly adequate explanation of the similarities.

2. Order of events

Heidel⁴³ lists the order of events in creation in common between *Enuma Elish* and Genesis 1 as: primeval chaos, light, heavenly firmament, dry land, luminaries, man, god's (God's) rest. That is a fairly impressive order until more closely examined. There are no references to light being created in *Enuma Elish*. In reference to the agitation of Apsu about the clamour of the younger gods Apsu says: 'By day I do not rest, by night I do not sleep' (I:38). If this is anything more than a proverbial expression used in a poetic context it would indicate that day and night existed right from the beginning before any work of creation. The gods are viewed as surrounded by radiance⁴⁴ as is standard in Mesopotamian treatments of gods⁴⁵. If these references prove anything it is that Gen. 1 contrasts with *Enuma Elish* in dealing explicitly with the creation of light rather than simply assuming its existence. Perhaps a better conclusion would be that the creation of light is outside the purview of the Babylonian text.

Placing of the creation of dry land between that of the (heavenly) firmament and that of the luminaries comes from Heidel's treatment of IV:142-145 which I have argued against above. The parallel of God's sabbath rest with *Enuma Elish* is also very weak. After the creation of man the gods made Marduk's temple and then held a banquet at which Marduk's praise was proclaimed. Thus the real parallels come down to watery beginnings, heavens, man. This is hardly sufficient to build a theory of dependence.

3. Chronology

Older works tended to date the composition of *Enuma Elish* to the early second millennium B.C. More careful studies of the appearance of Marduk as head of the Babylonian gods, which is the main subject of the myth, would put its date much later. Lambert suggests the reign of Nebuchadnezzar I (c. 1124-1103)⁴⁶. On the basis of similar data Sommerfeld⁴¹ would leave open the possibility of a little earlier period, the late Kassite period. (c. 13th, 12th century)⁴⁷. Given these much later dates, the possibility of borrowing in Gen. 1 depends very much on the date assigned to Genesis. If we take the Biblical evidence for ascribing the Pentateuch to Moses⁴⁸, and date Moses according to the 480 year date of 1 Kings 6:1⁴⁹, then Genesis may be contemporary or even earlier than *Enuma Elish*. Of course, the later date of 'P' and hence Genesis 1 is one of the main features of the Developmental Hypothesis. Consideration of these issues is outside the purview of this paper. All that I will say is that a Biblical dating of the composition of Genesis makes the question of a literary dependence on *Enuma Elish* scarcely worth considering on purely chronological grounds.

4. Conclusion

The contacts between Gen. 1 and *Enuma Elish* are of the most general sort. At the most we are dealing with the sorts of similarities found between Gen. 1 and many other creation accounts. Watery origins is probably the most important of the parallels. The spread of parallels then becomes so wide that one hesitates between a thesis of very distant common origins and one of accidental similarity.

The sea and sea creatures

When one considers the passages in the O.T. outside of Genesis, which are commonly ascribed to mythical origins, the appearance of the sea or sea creatures is very common. To understand these passages we must trace the influence of Gen. 1 on the later texts. Gen. 1 describes how the creation was progressively ordered for man until it became a world in which man could live. In this the creation of dry land was an important event. Obviously man could not live in a world covered by sea. Any reversion to the original state of the earth would signify a withdrawal of God's mercy in creating a world for man. It would be judgment. Hence the obvious connection between the creation account and the flood account. God in taking the world back to its original condition, brings judgment upon man. The overflowing waters signify judgment.

Yet in judgment there is also grace. The man who fears God is saved from the judgment. These themes of judgment and grace through water are reinforced by the Exodus. Moses' delivery from the threat of death by water is very clearly related to the flood description. The delivery of Israel and the judgment of Egypt in the Red Sea emphasises similar themes.

Thus flood becomes a metaphor and image of judgment. When threatened by judgment, to whom does the God-fearing Israelite look? He looks to God who has saved his people in the past, specifically from the flood of great waters, and will again save them. (Ps. 29:3,10,11; 32:6; 46:1-3).

The strong consciousness of the flood as *the* great instance of judgment (cf. 2 Peter 3:3-6) makes the grace of God in preserving the earth from water a cause for earnest thankfulness. Thus Ps. 104 is a poetic commentary on Gen. 1 and 2. It clearly follows the order of the creation days. Yet there is an extra emphasis given to describing the events of the third day (Ps. 104:5-9). God's fixing of a boundary for the sea is especially significant, for the earth remains liable to be destroyed for the sin of those who dwell in it. Weiser is typical of the tendency to read 'modern' concerns into such psalms. He sees here a cosmological picture. That is the idea that the 'earth, shaped like a circular disk, now floats on the ocean and yet is firmly established on invisible foundations'⁵⁰. Behind such an interpretation is a secularised mentality. If the psalmist is worried about water he must have some (primitive, of course) mechanical hydraulic concern. 'Are the

earth's foundations sound engineering?' Is that not the question our age would expect? However the psalmist writes from the perspective of one who knows that no engineering will prevail if the living God should call for the waters to come up and cover the earth. The placing of the sea in its place is part of the mercy of creation.

Similar thoughts come through Ps. 24:2. The Lord's control, a control that goes back to his creative rôle, is a thing to be praised. It is common to see this verse as once again largely concerned with cosmology. That is in giving a picture of the earth floating like a disk on the waters⁵¹. Yet why would the psalmist launch into speculative cosmology at this point? There is another explanation which accords far better with the tenor of Biblical thought. The important point is that the placing of the land above the sea is what preserves it from the judgment by water. In the light of passages like Ps. 104:6-9; Jer. 5:22 there is no need to postulate that the psalmist thought of water beneath the earth. He may simply refer to the water of river and sea (as the text says)! God preserves his creation by making it higher than such masses of water.

Hence the believer may rest in the providence of God that keeps the waters under control. Though they seem to threaten, they cannot destroy the man under God's protection. It follows therefore that we will have passages in which the floods are seen as a danger to be restrained by God's power (e.g. Ps. 93:3,4). The common tendency has been to see the waters as a threat to God which he has to overcome⁵¹. There is no reference in this psalm to a threat against God. He does not become king by defeating the waters. He is king. The threat is to man. God shows his covenant mercies in redeeming man from the judgment by water that threatens him.

A similar psalm is Ps. 18. Here the threat is quite clearly to man. The connections to the Exodus are very clear. In v. 16 David puns on the name of Moses as one drawn out of the waters. This psalm adds a significant new note to what we have already considered. The judgment of 'great waters' that threatens David is human enemies. God's intervention to save his servant is an intervention against human enemies and thus a rebuke to the 'floods' of judgment.

A full understanding of this variation on the flood theme depends on appreciation of the early chapters of Genesis. Gen. 3 tells us that sin brought division and opposition into creation itself. There is a hostility of the creation to man. It does not obey him as lord any more. It is of course no problem to Biblical thought to make a human both an instrument of God's judgment and an enemy of the people of God to be repulsed. That is the way the Assyrian king is viewed in Isa. 10:5-19. So the threat which water poses to man becomes an image for the threat of human enemies. Of course, there is an historical precedent for this association, especially as reflected in Ps. 18. It was Pharaoh who commanded

that water destroy the Hebrew babies and it was God who delivered Moses from the threat of man and water.

The hostility is not just between man and sea. It is also between animals and man (Gen. 9:5). Hence it is not surprising that animal threats can also become a metaphor for human enemies, e.g. Ps. 22:12,16,20,21; 68:30.

From the prominence of judgment by water and the fact that animals can become a metaphor for human enemies, there is a logical deduction. Water animals are an obvious metaphor for enemies threatening the people of God with destruction. When such pictures occur in the Bible they are commonly regarded as borrowings from cosmic myths in which a warrior/creator god vanquishes a monster. However there is a way within Biblical thought itself, without outside influence, for a rôle of water animals as pictures of enemies. We shall have to consider whether the way that picture is presented shows a literary contact and influence, but conceptually there was no need for outside contact. The concepts are provided by Biblical thought itself.

There are some passages which refer to water animals being overcome by the power of God in which the context does not help much in determining what event is meant. Whenever the context is clear the reference is to historical events in which God delivered his people from their enemies. It is not to a cosmic battle of God against a monster. This is generally explained away by saying Israel has 'historicised' an original cosmic myth. However, it is illegitimate to resort to this explanation when there is a simpler explanation in terms of Biblical categories without the need to appeal to concepts alien to the culture.

One of the terms used in such contexts is Rahab. In Ps. 87:4 Rahab is mentioned in a list of countries. Since Egypt is not elsewhere in the list, a suggestion that Rahab means Egypt is plausible. In Isa. 30:7 Rahab is declared to be an appropriate name for Egypt. It is possible that in all its occurrences Rahab is simply a term for Egypt. That it is viewed as a water animal in poetic parallelism may simply reflect the tendency already discussed to view human enemies as animals. Isaiah 51:9-11 is a good example. The passage would make perfect sense if Rahab stood for Egypt as the verses immediately following make clear that the reference is to the crossing of the Red Sea. However it is possible that the transmission of ideas goes the other way and Rahab was originally a sea creature whose name became attached by such poetic association, to Egypt. There are several other passages where the context is of less help. Ps. 89:9 refers to God's stilling the waves and then the next verse mentions the defeat of Rahab. Once again the crossing of the Red Sea is a possible interpretation. Job 9:13 is too cryptic to be of support to any particular interpretation. It is also possible that a root meaning of the name Rahab as something like 'arrogant' stands behind this verse rather than any particular country or animal.

Another animal which occurs in such contexts is Leviathan. In Ps. 74:12-15 we find another reference to the crossing of the Red Sea. In this context the Egyptian enemy is personified as Leviathan. A possible reference to Egypt is also found in Isa. 27:1. This refers to a future judgment but Egypt could well be in view.

Other examples of human enemies as water monsters are Ezek. 29:3-5; 32:2-6; Jer. 51:34. The fact that such metaphoric use does not convey notions of cosmic, eternal hostility is shown by passages where these creatures are seen as under God's control, as part of his creation (Ps. 104:26; 148:7; Job 40:15—41:34). Weiser is forced to explain the reference to Leviathan in Ps. 104 as a transformation of an original chaos monster⁵³. However that assumes that mythology is original and creation a secondary development within Israel. Actually no transformation is needed for somebody who believes Gen. 1:20,21.

It would be a mistake to picture all mythologies or even all Near Eastern mythologies, as containing an idea of a cosmic conflict before creation⁵⁴. Nevertheless it is an element in some myths, e.g. *Enuma Elish*. The Biblical text also contains an idea of a conflict which influences the whole world. However in the Biblical text the conflict occurs subsequent to creation and is a consequence of sin. It is a consequence of this that the battle with the water monster occurs in a historical rather than a cosmic context.

Thus both Bible and myth may contain conflict and both may see a water creature as part of the conflict. Here there is a similarity and the similarity may go even further. It may include even similarity of images or verbal parallels. The most striking case of this is the parallel between Isa. 27:1 and several Ugaritic myths. In the translation below, where the Ugaritic is using a word cognate to a word in Isa. 27:1, I have tried to translate by the word common in English versions, in order to bring out the verbal parallels.

VT 67:1-3.	Because/when thou shalt/didst smite Lotan the fleeing snake, thou shalt/didst finish off the twisted snake, the mighty one (?) of seven heads ⁵⁵ .
Anat 3: 35-41	(Anat speaks): Did I not destroy the darling of El, Yam (sea)? Did I not finish off River, the great god? Did I not muzzle the monster, Did I not muzzle him, I destroyed the twisted snake, The mighty one of seven heads, I destroyed the darling of the gods, the earth, Mot ⁵⁶ .

The idea of a seven-headed snake is found also in Mesopotamia as an enemy of the god Ninurta and later the god Nabu⁵⁷.

If the reference to the 'heads' of Leviathan in Ps. 74:14 alludes to a multi-headed monster then we would have a further parallel. It could be however, that Leviathan is seen as having many heads for no other reason than that it is a personification of Pharaoh and his charioteers and the heads stand for the leaders of Egypt. Alternatively, it could be a consequence of the parallelism of the one Leviathan with the multiple monsters of the preceding line.

Yet even if Ps. 74:14 is merely an accidental parallel, the verbal parallels with Isa. 27:1 are fairly clear. These parallels may conceivably have arisen in various ways. Ugarit ceased to be inhabited some five hundred years before Isaiah. The literary relationship cannot be explained by direct borrowing by Isaiah from a Ugaritic text. Rather both Ugarit and Israel must have had some connection with a culture in which sea creatures were described with standard epithets⁵⁸.

The connection of Ugaritic texts, and at a greater remove Mesopotamian texts, with Biblical texts can be understood under various models. It could be a case of the Biblical author quoting a myth and carrying undigested elements of mythology into the Biblical text. Alternatively, it could be a case of the Biblical author using the poetic imagery of a well known myth in a non-mythical way. Or it could be a case of mythographer and prophet but drawing upon a common literary culture where sea creatures were described in a certain way, but each fitting the creature into his own worldview. The data of verbal parallels as such, does not prove one model rather than another. The use of such passages to prove the existence of myths in the Bible, is therefore a very weak argument. It is very hard to decide on any grounds between the second and third models outlined above. If the multiplicity of heads in Ps. 74:14 goes back to the picture of an imaginary monster, then the choice would seem to lie between the first two possibilities. However, as explained above there are alternative explanations, within the Ps. 74 itself, for the multiplicity. That would make the third model a possibility. The model of undigested mythology incorporated into the Biblical text, though commonly assumed to be the only possibility, is made unlikely by the very data we have been considering. The rôle played by judgment by water, and hence sea creatures, reflects the dependence of Biblical thought upon the creation narrative. That must make most unlikely a taking over of mythic thought, especially in Isaiah! Hence we are left with the possible models of poetic use of mythic imagery and borrowing by both from a common literary culture. It is really hard to tell which to choose.

We face similar problems to those posed by the commonness of watery origins in creation narratives. Those who assume that Biblical monotheism is a late development will assume that the Bible has adapted original myth. However if

the Biblical account is true, and creation did occur, then the development of monotheistic faith is a development which goes on in parallel with myth. The common data of creation, water or sea creatures, are interpreted by each within their own structure of thought. Thus we come down to the level of assumptions. The Biblical text does not attest dependence of myth. It does attest contact with a culture within which mythology was also developing. The assumption that the text must be derived from mythology is really based upon denial of creation, not upon the text itself.

It has been suggested that the story of the conflict between Ti'amat (sea) and Marduk came from the Syro-Phoenician area⁵⁹. If this is the case then the Biblical writers would be closer to the site of the development of the whole theme of a conflict with a water monster. Hence literary overlaps between the Bible and such themes in Ugaritic and Babylonian literature would be more likely. However, this thesis depends upon the claim that such themes were unknown in Sumerian literature. One wonders whether the story of Ninurta and Kur⁶⁰ is being overlooked. Also there may be an ignoring of the possibility of originality in 2nd millenium Babylonia. Certainly Sumerian cosmology seems more peaceful. But given the unsettled times of the late 2nd millenium a cosmology which develops elements of the Ninurta myth, into a cosmology with greater conflict, is quite possible.

The well-watered land and drought

Attempts to find mythology in the Bible have largely been directed, by the availability and popularity of *Enuma Elish* into texts which concern water and water creatures. However, the Biblical theological structures which have been discussed above do not just apply to those themes. Very similar developments take place with themes from Gen. 2. It is often stated that Gen. 2 constitutes a second account of creation of different origin to Gen. 1. Consideration of that possibility lies outside of the concerns of this text. However a fundamental assumption behind the claim needs to be pointed out. It is that the Biblical authors would tell a story as we do, putting all the details into the one story. There is, of course, a different way. That is to tell the story several times, emphasising different aspects of the whole in each account.

What then is emphasised in Gen. 2? One of the themes is provision of water for the land. When the author of Ps. 104 made his poetic version of Gen. 1, he inserted the note about rain and springs into its logical position, that is into the middle of the account of the third day (Ps. 104: 10-13).

As with the consideration of floods, the mercy of God in providing springs originally, is reinforced by later instances of such mercy. The giving of springs in the wilderness on the way from Egypt to Canaan, reinforces this theme.

The provision of a well watered land, is a reminder of God's goodness in creation (Isa. 51:3). Conversely a withholding of water in judgment is a reversal of that goodness in creation. It is a return to a state in which man cannot live. This connection is most explicit in Jer. 4:23-26. There are many reversals of creation in this passage. The earth becomes formless and void once more. Light is withdrawn. Also the fruitful land becomes a wilderness. Here also is a reversal of creation but this time a reversal of something described in Gen. 2 rather than Gen. 1. Once more as in Ps. 104 elements out of Gen. 1 and 2 are combined quite naturally. In Isa. 50:2,3 drought and darkness are once again combined.

Once again themes out of the creation account are being utilised to describe God's mercy and judgment. The treatment of the theme of the well watered land is quite explicable in terms of the creation account. If that is true for the treatment of this theme, then it should also be for the theme of the floods which utilises the same theological concepts.

The fall into sin

The attempts to find mythical origins for the account in Genesis 3 have often been little short of desperate and fantastic. Speiser⁶¹ suggests connections to the story of Enkidu in the Mesopotamian *Gilgamesh Epic*⁶² and the *Adapa*⁶³ story. In the *Gilgamesh Epic* Enkidu was a creature created by the gods to redirect the energies of Gilgamesh. At first Enkidu lived amongst the animals and helped them. However after his seduction by a harlot the animals shun him. The connection to Gen. 3 is a little tenuous to say the least! The *Adapa* story describes how Adapa was summoned to heaven. In fear of being given the bread and water of death, he refused the bread and water of life he was offered. It could be that this is a Mesopotamian attempt to explain the aetiology of human mortality. However it should be noted that the text says Adapa was originally created mortal. At the most, one could say that this story and Gen. 3 have in common the giving of an explanation for human mortality. The explanations given have nothing in common.

It once seemed that a Sumerian description of a peaceful, monolingual paradise existed. This interpretation of the story *Enmerkar and the Lord of Aratta* has now been rejected by several scholars⁶⁴. The Sumeriologists are now complaining that Sumerian literature should be interpreted on its own terms, instead of having fancied Biblical parallels used to impose a false interpretation. One has to be aware of the tendency of some scholars to interpret texts which are poorly preserved and linguistically difficult by means of Biblical parallels. The texts interpreted in this way are then 'obviously' parallel to the Bible. The process is not necessarily a conscious one. Partly we are facing the natural tendency to interpret the unknown (Sumerian) in terms of the known (Biblical). Yet the result is the lessening of the individuality of the other Near Eastern cultures, just as much as the individuality of Biblical thought is denied.

Conclusion

A text like *Enuma Elish* with its apparent confusion of cosmological parts, persons and temples may be very difficult for us to understand. Yet if it is to be understood, it must be in its own terms and not by the imposition of a fancied 'mythical mentality' upon the interpretation process. Similarly the Biblical text must be interpreted in its own framework. The framework is not a half-baked borrowing and 'historicising' of an existing, but ideologically alien, mythology. It is a view of the world in which history is built upon creation and has to be understood in terms of the events of creation. It is that very view of the relationship of history and creation that is so distinctive.

Certainly myth and Bible deal with things in common, e.g. the world, man, death. They do so as common participants in a common literate civilisation. Hence the parallels, even the verbal parallels are there. Yet while recognising this commonness, it is poor scholarship, both for the Biblical scholar and for the student of the surrounding cultures, to refuse to interpret each in its own ideological and historical context. The parallelomania which dominates the Biblical field is a symptom of intellectual impoverishment. The hard work of thinking our way inside the Mesopotamian mind and the Biblical mind has been forsaken in favour of a discovery of superficial parallels. The work of understanding a mentality has been neglected for vague generalities about 'mythical mentalities'. It is far easier to impose an image we can understand upon an ancient text than to understand the categories of the text.

Perhaps an illustration of the problem may serve as conclusion. Sheol and waters stand closely associated in a number of Biblical texts, e.g. Ps. 69:15. It is commonly assumed that the picture is physical. Water and Sheol are both under the earth, hence they are associated. Yet it is just as possible that the association is based upon some other concept. Assuming physical association, because that is what comes natural to modern man, is not scholarship! For example, in this case it is quite possible that the associative idea is the concept of judgment. Death and waters are linked not by physical proximity but by being expressions of judgment on sinful man. Other examples of this association that lend force to the suggestion are Ex. 15(cf. :5a 'the deeps cover them' with :12b 'the earth swallowed them') and Jonah 2:5,6. In both these cases people at the bottom of the sea are also viewed as being under the earth. That makes no sense as a physical association.

In all of these cases the surest antidote to the common superficial label 'mythical origin' is to try to understand the text itself in its own terms.

Notes

1. Note, for example, how B. Child's treatment of myth in the OT is prefaced by speculation as to the character of myth as a world-wide phenomenon. *Myth and Reality in the Old Testament*, London, SCM, (1960), pp. 17ff.
2. *Ibid.*
3. The title itself makes that clear in one of the clearest cases of such thinking: *Before Philosophy; the Intellectual Adventure of Ancient Man*, Harmondsworth, Penguin, (1949).
4. It would make an interesting line of investigation to pursue the relationship between the pantheism inherent in polytheism and the development of Greek, and later, modern philosophy. De-personalising ideas of force and power does not really make them 'less mythical'.
5. *Op. cit.*, pp.17-29.
6. *Before Philosophy*, pp.12ff.
7. *Op. cit.*, page 83.
8. *Ibid.*, page 85.
9. One wonders whether a policeman would also be guilty of a mythical view of space if he said on the witness stand: 'The shot was fired from point X and not from point Y.' Part of what is going on here is the over-interpretation of metaphor that so characterises attempts to find myth in the OT.
10. For the history of the way prevailing ideas have influenced treatment of classical mythology see T. de Vries, *Forschungs-Geschichte der Mythologie*, Freiberg, Karl Alber, (1961). For a case study of the influence of a western debate on a cultural anthropologist's study of a non-western society see D. Freeman, *Margaret Mead and Samoa. The making and unmaking of an Anthropological myth*, Canberra, A.N.U., (1983).
11. Translations may be found in a number of sources e.g. A. Heidel, *The Babylonian Genesis*, 2nd ed., Chicago, U. of Chicago, (1951); 'The Creation Epic' (tr. E.A. Speiser) in J.B. Pritchard (ed), *Ancient Near Eastern Texts relating to the Old Testament*, 2nd ed., Princeton, Princeton U., (1955), pp. 60-72.
12. Chicago Assyrian Dictionary (hereafter CAD) A/2, *ad. loc.*
13. P. Jensen, 'apsu-Apsu'. *Reallexikon der Assyriologie* (hereafter RIA), I. 122-4.
14. *Ibid.*; CAD *loc. cit.*
15. *Die Kosmologie der Babylonier*, Strasburg, K.J. Trubner, (1890), page 198.
16. *Op. cit.* page 43.
17. He translates the crucial word in IV:145 as 'firmament' which probably means 'sky' but might conceivably mean 'earth'. (*Op. cit.* page 67).
18. Vol. E page 364a 'the lord measured the dimensions of the Apsu and as a replica of it set up the *esgalla* (great temple) called Esarra, and the *esgalla* (called) Esarra, which he created, is the sky.'
19. See note 16. (Emphasis mine).
20. See note 18.
21. W. von Soden, *Akkadisches Handwoerterbuch*, Vol. 3 1154a.
22. B. Landsberger and J.V. Kinnier Wilson, The Fifth Tablet of *Enuma Elish*, *J.N.E.S.* 20 (1961), 154-179.
23. *Ibid.*, p. 161 11.53-57. There is also an obscure reference to the Apsu in a broken context in 1.60.
24. *Ibid.*, pp. 165ff, 11. 119-128.
25. S.N. Kramer, Review of A. Heidel, *The Babylonian Genesis*, *J.A.O.S.* 63, (1943), 73.
26. The 'monstrous' inhabitants of these areas are linked to Ti'amat in another text: *The Cuthean Legend of Naram-Sin*: O.R. Gurney, *Anatolian Studies* 5, (1955), 99 1.34.
27. *Op. cit.* page 48.
28. *Ibid.*, n. 126.
29. *Op. cit.* page 69a.
30. *Ibid.*, n. 100.
31. Cf the translation of 4:142 in CAD, Vol. M/I p. 70b: 'He (Marduk) made (his abode) like the abyss, the abode of Ea.'

32. RIA 2, 475f.
33. S.N. Kramer, *Sumerian Mythology*, Philadelphia, American Philosophical Soc., (1944), p. 66.
34. For translation see L. Cagni, *The Poem of Erra*, Malibu Undena, (1977). For discussion see N.M. Bailkey, 'A Babylonian Philosopher of History', *Osiris* 9, (1950), 106-30; P. Machinist, 'Rest and Violence in the Poem of Erra', *J.A.O.S.* 103, (1983), 221-226. It may be of interest in this connection to note the treatment of Nabu, the god who emerges as the Babylonian god of wisdom in the late second and early first millenium B.C. Whereas myths are developed to connect Enki the Sumerian god of wisdom with origins, you do not find such a development of myths about Nabu. He tends to take over by a process of syncretism, myths from other prominent gods. However, original myths of origin do not seem to be developed. See F. Pomponio, *Nabu. Il culto e la figura di un dio del Pantheon babilonese ed assiro*, Rome, Istituto di studi Vicino Oriente, (1978).
35. See for examples, H. te Velde, *Seth, God of Confusion*, Leiden, Brill, (1967), pp. 32ff.
36. Once more a book title says it well: G.E. Wright, *God Who Acts*, London, SCM, (1952).
37. See B. Albrektson, *History and the Gods*, Lund, C.W.K. Gleeruf, (1967). See in correction to Albrektson's over-reaction: W.G. Lambert, 'Destiny and Divine Intervention in Babylon and Israel', *Oudtestamentische Studien*, 17, (1972), 65-72.
38. See my 'Mari, Nuzi and the Patriarchs' *Abr-Nahrain* 16, (1975-6), 73-87. These errors have been used to argue a case for a return to the old critical position that the patriarchal narratives are essentially unreliable. See J. van Seters, *Abraham in History and Tradition*, New Haven, Yale U.P., (1975); T.L. Thompson, *The Historicity of the Patriarchal Narratives*, Berlin, de Gruyter, (1974).
39. For a critique of this attempt see A.R. Millard and D.J. Wiseman (ed), *Essays on the Patriarchal Narratives*, Leicester, IVP, (1980).
40. Heidel, *op. cit.* page 97.
41. 'Akkadian' is a term used for Babylonian, Assyrian and related dialects.
42. Heidel, *op. cit.* pp. 98ff; K.A. Kitchen, 'Myths and the Old Testament', *T.S.F. Bull.* No. 44, (1966), 3.
43. *Ibid.*, p.129.
44. 1:68
45. E. Cassin, *La Splendeur divine*, Paris, Mouton, (1968); A.L. Oppenheim 'Akkadian *pul(u)h(t)u* and *melammu*', *J.A.O.S.* 63, (1943), 31-4.
46. W.G. Lambert, 'The Reign of Nebuchadnezzar 1: A Turning Point in the history of Ancient Mesopotamian Religion' in *The Seed of Wisdom, Essays in honour of T.J. Meek*, Toronto, Toronto U.P., (1964), pp. 3-13.
47. W. Sommerfeld, *Der Aufstieg Marduks*, Kevelaer, Butzon and Bercker, (1982) (= A O A T 213), pp. 174ff. See also G. Komoroczy, 'The Separation of Sky and Earth' *Acta Antiqua* 21, (1973), 30.
48. O.T. Allis, *The Five Books of Moses*, 3rd ed., Philadelphia, Presbyterian and Reformed, (1964), pp. 5ff.
49. For a discussion of the chronological problems see J.J. Bimson, *Redating the Exodus and Conquest*, Sheffield, U. of Sheffield, (1978).
50. *The Psalms*, Philadelphia, Westminster, (1962), page 667.
51. *Ibid.*, pp. 232,3; with a different understanding of the engineering involved M. Dahood, *Psalms* 1, Garden City, N.Y., Doubleday and Co., (1966), p.151.
52. J.D. Shenkel, 'An Interpretation of Psalm 93:5', *Biblica* 46, (1965), 401-416; T.H. Gaster, *The Battle of the Rain and the Sea: An Ancient Semitic Nature-Myth*, *Iraq* 4, (1937), 21-32; Weiser, *op. cit.*, pp. 617-21; E. Lipinski, *Yahweh Malak*, *Biblica* 44, (1963), 436.
53. *Op. cit.*, page 669.
54. The separation of sky and earth seems a peaceful process in Sumerian Mythology. See G. Komoroczy *op. cit.* pp. 21-45; W.G. Lambert, 'A new look at the Babylonian Background of Genesis', *J.T.S.* 16, (1965), 294.

55. C.H. Gordon, *Ugaritic Textbook*, Rome, Pontifical Biblical Institute, (1965), page 178a.
 56. *Ibid.*, p. 254a
 57. W.G. Lambert, 'The Converse Tablet: A litany with Musical Instructions', in H. Goedicke (ed), *Near Eastern studies in honor of William Foxwell Albright*, Baltimore, Johns Hopkins, (1971), pp. 345, 350.
 58. For a discussion of the relationship of Ugaritic poetry to the Bible see P.C. Craigie, 'The Poetry of Ugarit and Israel', *Tyndale Bull.* 22, (1971), 3-31.
 59. T. Jacobsen, 'The Battle between Marduk and Ti'amat', *J.A.O.S.* 88, (1968), 104-108, Komoroczy, *op. cit.* page 32.
 60. See note 57.
 61. E.A. Speiser, *Genesis*, Garden City, N.Y., Doubleday, (1964), pp.26ff.
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 64. B. Alster, 'An Aspect of 'Enmerkar and the Lord of Aratta', *R.A.* 67, (1973), 104f.
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Eric C. Barrett and David Fisher

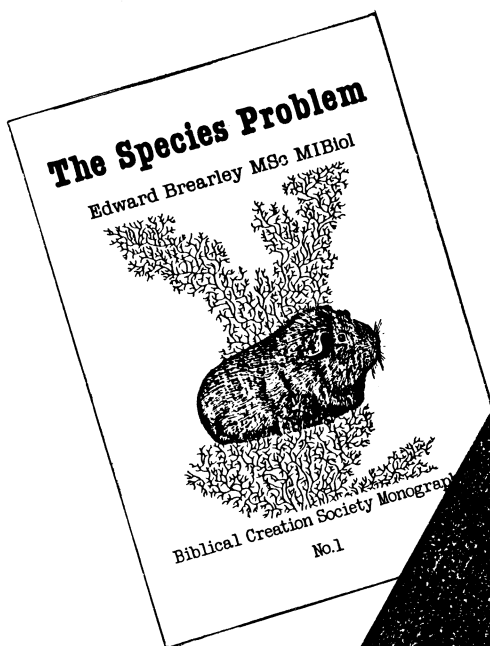
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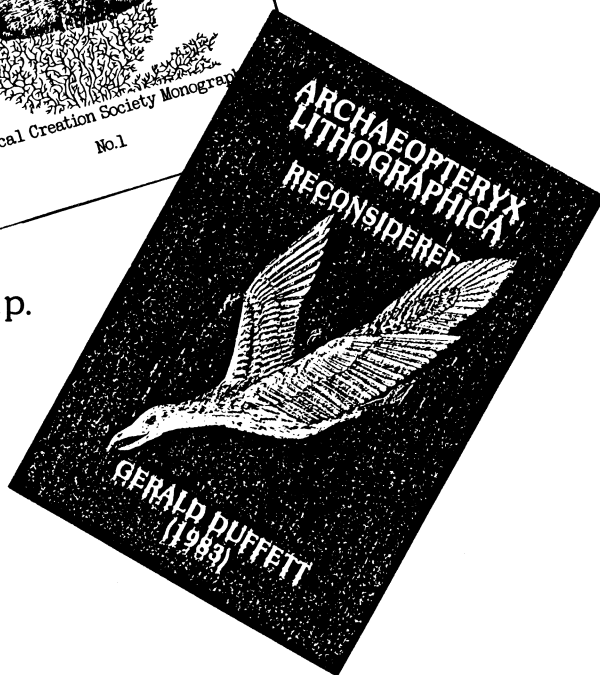
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THE ANTHROPIC PRINCIPLE

J. B. Griffiths

1. Introduction.

During the last few years a fundamental change has occurred in the popular conception of man's place in the universe. Throughout the previous centuries man was considered as having a less and less significant role. Eventually, the popular view came to be that we are only one of a large number of biological species occupying a totally insignificant location in the universe.

Naturally, there has been a reaction against this view of our total insignificance. This has been expounded during the last decade. But it is not a return to a more biblical view. Instead, there has been an attempt to state it more scientifically in terms of an anthropic principle. There is, however, no limit to such an approach. To some people the anthropic principle is simply an acknowledgement that we do occupy a significant place in the universe, while others go so far as to suggest that our role is so central that the entire universe is actually dependent upon our presence.

But the anthropic principle also has another significance. It is found not only to restore the human race to a more significant role, but it can also be used to support evolutionary theories or other theories that are dependent upon highly improbable processes. For example, it is used to support the argument that all the detailed stages of evolution must have occurred, or else we would not be here as the end product of such a process.

The purpose of this article is to describe what the anthropic principle states, and to assess its significance without going into technical details. I want to show that the principle can be used in a genuinely scientific way, but that its main emphasis is metaphysical. This metaphysics appears to be unbiblical, and is mainly used to support atheistic or humanistic world views.

2. Cosmological principles.

The anthropic principle was initially formulated within the context of cosmology, and it is appropriate here to introduce it in the same way. In this subject it is common to refer to a number of cosmological principles. The most important of these is the Copernican principle, which is usually interpreted as stating that we do not occupy a privileged or central location in the universe.

All cosmologies prior to Copernicus had considered the earth to be fixed and central. Then, in the seventeenth century, it was shown to be convenient to consider the earth to orbit about the sun. Even the sun was not considered as fixed, but was found to have a small motion due to its interaction with the planets. Then, in this century, the character of the Milky Way was given a satisfactory explanation, and distant galaxies and nebulae were identified. The result of this process is that we now consider ourselves to be located on one of a number of planets, orbiting about a typical star, located towards the edge of an ordinary spiral galaxy. This decentralisation of ourselves and the planet we live on within the universe is the essence of the Copernican principle, which can be stated in a variety of exact ways (see Ellis, 1975) in order to construct idealised cosmological models.

Some formulations of the Copernican principle have clearly been taken too far. For example, it was used to justify the now discredited 'Perfect cosmological principle' that was axiomatic to steady state cosmologies. In some ways the anthropic principle can be considered to be a counterbalancing emphasis. It was certainly introduced as a conscious reaction against an 'exaggerated subservience to the Copernican principle'.

The anthropic principle has now been widely accepted, and many popularised expositions of it are in circulation. The best of these include Gale (1981), Demaret and Barbier (1981), Davies (1982), and Barrow and Tipler (1986).

3. The weak anthropic principle.

Although a number of people had previously anticipated the essential ideas contained in the anthropic principle, the title and first formal statement of it was given by Carter (1974). Essentially it consists of the recognition that 'although our situation is not necessarily *central*, it is inevitably privileged to some extent'.

Clearly, we do not live at a typical or arbitrary point in the universe. We simply could not exist at most points. Our location on the earth's surface contains the only environment in the universe in which life is actually known to exist, and we know of no other environment in which we could exist in a natural way. Thus we are necessarily confined to a very particular location, and we can only observe the universe from it. We must therefore recognise that 'what we can expect to observe must be restricted by the conditions necessary for our presence as observers'.

Carter introduces as a 'weak anthropic principle' that -

We must be prepared to take account of the fact that our location in the universe is necessarily privileged to the extent of being compatible with our existence as observers.

No exception can be made to this statement, and it appears to contain nothing that is particularly new. However, as Carter (1983) explains - 'The practical scientific utility of this principle arises from its almost tautological corollary to the effect that in making general inferences from what we observe in the universe, we

must allow for the fact that our observations are inevitably biased by selection effects arising from the restriction that our situation should satisfy the conditions that are necessary *a priori*, for our existence'.

It may be observed, however, that when people refer to the anthropic principle, they usually refer not so much to the actual statement above, but rather to a style of argument that is formulated from it. This style of argument can be demonstrated using a particular example.

The initial application of the anthropic principle was in an analysis of the significance of certain 'large number coincidences'. Dirac had observed that some of the fundamental constants and cosmological parameters had very large values that were of the same order of magnitude, and this apparent coincidence had led him to suggest that these constants might be related. One of these constants was the 'age of the universe' as measured by the inverse Hubble rate. However, it was pointed out by Carter (1974) that, in the framework of the big bang theory, the age of the universe had to have its present order of magnitude, or we would not be here to discuss it. Specifically, he argued that life could only occur on planets orbiting about stable second generation stars, and these can only occur when the age of the universe has its current order of magnitude. Thus it is not a 'coincidence' that the universe appears to have its present age, it is a necessary condition for our existence.

Two points may immediately be observed from this illustration. Firstly, it must be emphasised that the anthropic principle only works in conjunction with a number of other theories. The above example is based on the big bang theory, and the currently accepted theory of stellar evolution. The anthropic principle is introduced with the condition that we can only exist near a stable star and in a region containing higher elements. Secondly, it can be observed that, with this anthropic condition, these theories could actually predict the value of the Hubble constant, at least within a few orders of magnitude, if this had not already been known.

As has been pointed out, the anthropic principle works within the context of 'currently accepted theories'. These include the big bang theory, the theory of stellar evolution, and the theories for the chemical and biological evolution of life. These are assumed implicitly. The weak anthropic principle initially requires that these theories should be consistent. It requires that cosmological models should be consistent with all properties that, at various stages, are thought to be necessary for the creation and evolution of life at some locations. It then subsequently requires that the model should be consistent with our observations, which are necessarily made from one such location and epoch at which life could have evolved.

In the first stage of this argument it is assumed that life has evolved, and all the conditions that are thought to be necessary for this may be used to constrain cosmological models. Considered in this way, the anthropic principle can be seen initially to work like a statement of faith in the theories of chemical and biological evolution.

It may however be pointed out that the anthropic principle is not necessarily dependent upon any particular cosmological or evolutionary theory. I have elsewhere (1984) attempted to formulate the anthropic principle in a theory independent way, but so far it has only been applied in the big bang - evolutionary framework.

4. Implications for biological evolution.

An essential feature of the anthropic principle is that it uses the data and theories of biology to place constraints on cosmological models. In particular the theory of biological evolution is used to explain certain coincidences in big bang cosmologies. However, the converse argument can also be applied. The framework of a big bang cosmology also places restrictions on the theory of biological evolution. This argument has recently been analysed by Carter (1983), who has found evidence which 'suggests that the evolutionary chain included at least one but probably not more than two links that were highly improbable (*a priori*) in the available time interval'.

It is well known that the theories of chemical and biological evolution depend on a number of processes that are highly improbable, even within the time scale of standard big bang theory. Carter's paper acknowledges this. Now, it is clearly reasonable to adopt the view that these processes could not have happened and the theory must be wrong. However the anthropic principle provides a way out. Essentially, it can now be argued that, since we are here, life must have evolved, and however improbable any step may have been *a priori*, it still must have occurred.

In statements like this, the anthropic principle is again being used as a statement of faith in the theory of evolution.

5. The strong anthropic principle.

In his original article (1974), Carter also introduced a 'strong' anthropic principle with the statement that -

The Universe (and hence the fundamental parameters on which it depends) must be such as to admit the creation of observers within it at some stage.

At first glance, this statement appears to be concerned with the creation, or more strictly evolution, of observers. But this is not so. The evolution of observers is already considered as a fact to be included when applying the weak anthropic principle. According to this weak form, the conditions that are thought to be necessary for our existence are used both to constrain cosmological models, and to restrict the applicability of our observations. In practice, the strong anthropic principle is used to take this first type of argument a step further, by recognising that our very existence implies constraints on the universe itself, and in particular

on the fundamental constants and parameters which characterise it.

The point recognised here is that if the values of any of the fundamental physical constants were even slightly different to their known values, then life would probably no longer be possible. Hyperthetical universes that were only slightly different to our own, would probably be devoid of life.

As a trivial and elementary example, we may observe that if gravitational forces satisfied an inverse cube law, rather than an inverse square law, then planets could not exist in stable bounded orbits about stars. All orbits would either spiral into the star or spiral out into space, and in either case life could not exist. This example simply illustrates how the existence of life can be used like data to restrict the range of possible gravitational theories.

Biological life is very complex, and is clearly dependent on very many factors. Although most writers on this subject also include the conditions that are necessary for the creation and evolution of life, this is not entirely necessary. Conditions that are necessary simply for the support of life, range from certain global properties of the universe as a whole, to the particular properties of interactions between elementary particles within the nuclei of atoms. These conditions are so basic that it is possible to use the fact of our existence to restrict the structure of many physical theories, and in particular to constrain the values of the fundamental constants and arbitrary parameters that are contained within them.

It should of course be observed that these physical theories and their fundamental constants were all previously known. And of course, the possible range of values of the fundamental constants for life to exist, must necessarily include their known values. However, in many cases the range of possible values of these constants is found to be remarkably short. Reference is therefore often made to the 'amazing coincidences' that the fundamental constants are contained in the ranges that are necessary to permit the existence of life. It is then suggested that these coincidences require an explanation.

The various explanations of these apparent coincidences in terms of the anthropic principle are considered below. Many of the coincidences themselves are listed by Carr and Rees (1979) and Rozental (1980).

6. Evidence of design.

The main point recognised by the anthropic principle is that the existence of life is critically dependent on the detailed working of a large number of physical processes. To an unbiased observer, it must seem as though the entire universe, and our environment in particular, must have been specifically designed in order to support life.

Once it has been recognised that there is very strong evidence that the universe has been designed, it is but a small step to recognising the existence of a designer. This argument has been used in natural theology for many centuries. However,

from a more biblical point of view, we would not place any confidence in such an argument. We do not expect to be able to prove the existence of God logically. By faith we believe God. And then, believing in God, we expect to see the evidence of design in his creation. We are, therefore not surprised by the apparent coincidences that have led to the formulation of the anthropic principle. Nor are we particularly surprised that even slight variations in some physical constants would render life impossible.

7. The many worlds interpretation.

In spite of the fact that the anthropic principle seems to involve a recognition of the evidence of design, most of its proponents do not see it in that way. Instead, they introduce the concept of a 'world ensemble' consisting of all possible theoretical universes, each characterised by different values of the fundamental constants and parameters. Out of this ensemble of different universes it is then considered possible to single out our universe, or at least a family of universes not too different from our own, simply by imposing the conditions that are thought to be necessary for the existence of life.

The concept introduced here is not new. Leibniz and others in the early eighteenth century suggested that God must have considered an infinite number of possible universes before he actually created this one. It was suggested that God has created the best of all possible worlds for us, and that therefore the physical processes that occur should satisfy the kind of optimality conditions that are now being recognised in the anthropic principle.

The modern emphasis, however, is very different. It is now suggested that all these possible universes actually exist in some real sense. Various suggestions have been put forward for interpreting the existence of the other universes in the ensemble. A number of these are described by Leslie (1982). It is not necessary to assess the possible interpretations of these other universes, but it is appropriate to describe the kind of argument that is based upon them. This is roughly as follows.

The ensemble contains all theoretically possible universes, each of which has a different combination of fundamental constants and initial conditions. Then, every feature that is considered to be necessary for the existence of life may be accorded a certain probability within the ensemble. Thus, however improbable it may be for all these features to combine in one universe so that life can evolve in it, the existence of at least one such universe is guaranteed. Then, according to the anthropic principle, it is no accident that we just happen to observe this particular universe, as we could not exist in any other.

It is with arguments such as this that atheists explain the apparent evidence of design. With an approach which considers the real existence of many universes, they remove the mathematical improbability of the evolution of life in one universe.

8. An ultimate explanation?

Most advocates of the anthropic principle see in it an explanation of the 'amazing coincidences' that the fundamental constants and parameters have just those values that are required for the existence of intelligent life. Using Carter's paraphrase of Descartes '*Cogito ergo mundus talis est*'. Because we exist, the fundamental constants must have (approximately) their known values, and therefore the physical processes that occur in the universe must behave in the way they do. The things that happen do so because we are here.

Of course, as has been pointed out by Hall (1983), this may be considered as only a very weak level of explanation. It is possible to develop scientific theories to explain why things happen in a way that can be analysed and predicted. But we believe that there is more to life than can be contained in scientific explanations. Recognising this, some scientists have come to see in the anthropic principle an ultimate explanation (e.g. Rosen, 1985).

Rosen (1985) has also pointed out that, considered in this way, the anthropic principle amounts to extreme philosophical idealism. In a similar way, adapting the Copenhagen interpretation of modern quantum theory, it is often considered that it is our presence as observers that has actually selected our particular universe. Wheeler (1977) has gone so far as to suggest 'that the observer is as essential to the creation of the universe as the universe to the creation of the observer'. Arguments like this can also be used to explain the apparent evidence of purpose in the universe.

9. Conclusions.

It should be seen from the above discussion that the anthropic principle is not itself a scientific theory. Nor is it a traditional kind of cosmological principle which, as a simplifying statement, forms an essential step in the construction of idealised cosmological models.

At one level, the anthropic principle can rather be seen simply as the requirement that cosmological models should be consistent with our observations of the universe. This of course says nothing new. It is the basic requirement for cosmology to be considered as a scientific subject. The weak principle requires that we recognise that all our observations are taken from a location in the universe in which life exists, while the strong principle recognises that the existence of life places constraints on the structure of any scientific theory.

It can therefore be seen that the anthropic principle can only operate within the context of a number of scientific theories. It can only use the results of one theory to constrain another. Now, in practice, all proponents of the anthropic principle assume a background of standard big bang cosmology and evolutionary biology. They therefore use the conditions that are thought to be necessary for the evolution of life to constrain certain parameters. Thus, in applications of the anthropic principle, it should be recognised that cosmological and biological

evolution are assumed, and so its results should be considered no more seriously than the evidence for these particular theories. The anthropic principle by itself can predict nothing.

The main use of the anthropic principle however is metaphysical, and is contained in a style of argument. We are familiar with the argument that, according to the theory of evolution, life forms have evolved to suit their environment. The anthropic principle attempts to complete the picture by suggesting that the environment has actually been selected in order that life may evolve. With the concept of a world ensemble, the apparent evidence of design can be explained with an alternative argument to the theistic one.

In terms of world views, the anthropic principle has also had an opposite effect to that of the Copernican principle. The effect of the Copernican principle has been to decentralise man, and relegate him to an insignificant part of the universe. With the anthropic principle, man can be replaced to such an important position that the entire universe is in some sense dependent upon him. But this is metaphysics, not science.

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Dear Sir,

'Darwin's Finches'

I read with great interest the article by Susan Coleman on Darwin's Finches in the last issue of *Biblical Creation*. I found the arguments clearly presented, and as a biology teacher I would be happy to present students with a copy of her paper and expect them to consider evolutionary explanations of Darwin's Finches in its light.

I was however fascinated, if not a little surprised to find that the article did not challenge the belief that Darwin's Finches have evolved on the Galapagos Islands from one (or several) pairs of finches! At first sight this seems remarkable for a paper which purports "to promote creationist teaching and refute the evolutionary position" (p3). It transpires, however, that the author believes that the evolutionary position can be refuted by arguing that the differences between the various finches on the Galapagos may not be sufficient to require them to be classified into different species.

I consider this argument of Susan Coleman's to be incorrect for two reasons. First, whether or not Darwin's Finches belong to one species, they manifestly show such a range of anatomy and behaviour that considerable evolution must have occurred if the entire Galapagos stock really does spring from only a few pairs. Secondly, and less importantly, Susan Coleman really is pushing things rather to suggest that the entire group should be classified as a single species. As she herself points out breeding between that various taxa is either absent or very rare, while every classification system produced over more than a hundred years has classified the birds into at least four genera, let alone fourteen species! If Darwin's Finches really do belong to a single species, then the principles of classification into species and genera, broadly accepted more than a hundred years before the publication of "The Origin of Species" and adhered to ever since by both creationists and evolutionists, are in need of a quite remarkable and far-reaching review with consequences for the taxonomy of all living and extinct species.

Readers of *Biblical Creation* may be interested to know that a detailed rebuttal of the evolutionary interpretation of Darwin's Finches has been published by Geoffrey Harper (1980, 1985). Harper argues that the various species of finch flew to the Galapagos Islands, and did not speciate on the archipelago. He presents an alternative 'irruption' theory. This postulates that all the species we

know today arrived on the islands as a mass irruptive migration movement from the north-east, in much the same way that European finches such as crossbills, siskins, northern bullfinches, mealy and lesser redpolls, pine grosbeaks and bramblings may migrate over extensive and varied areas due to the erratic nature of their food supply. Harper's theory has been criticised (Galbraith, Mills & Brooks, 1984) but remains, so far as I know, the only criticism of the traditional evolutionary interpretation of Darwin's Finches.

Yours sincerely,

Michael Reiss

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